

NOTES ON CANADIAN AND ARCTIC SPIDERS.

BY J. H. EMERTON,

Boston, Mass.

Since the report on the spiders of the Canadian Arctic Expedition of 1913 to 1916, the writer has had opportunity to examine a considerable number of arctic spiders from the American Museum of Natural History of New York and from the Zoological Museum of Copenhagen, Denmark, the latter including some from Iceland. The Iceland spiders appear to be mainly species living in the British Islands and Northern Europe, while those from Greenland are for the most part Canadian, extending westward to Alaska and Siberia, and southward through the bogs of Canada to the mountain tops of New England and the Rocky Mountains of Canada and the western United States. The following notes give the results of comparisons of spiders from Greenland with those of the same or similar species living in Canada and the mountains of the northern United States.

Hilaira (Erigone) glacialis, Thorell, 1871, Spiders of Spitzbergen and Beeren Islands.

Erigone vexatrix (Camb. 1877), Koch 1879, Spiders of Siberia and Nova Zembla.

Hilaira glacialis Kulczynski 1908, Spiders of Russian Expedition to New Siberia Islands.

Spitzbergen, Siberia.

Collinson Point, Alaska, Canadian Arctic Expedition.

Saunders Island, West Greenland, Crocker Land Expedition.

Hilaira (Erigone) læviceps, Koch, 1879.

Hilaira læviceps, Kulczynski, 1908.

Tmeticus brunneus, Emerton, 1882, Connecticut Academy. Siberia.

Nome, Alaska, Canadian Arctic Expedition.

Banff, Alberta, Canada. Sulphur Mt., N. B., Sanson.

Mt. Washington, N. H. Emerton, Slosson.

East Greenland, Angmagsalik, 66° north, Krnuse.

Lophocarenum (Erigone) barbata, Koch, 1879.

Diplocephalus barbatus, Kulczynski, 1908.

Siberia.

Etah, West Greenland, Peary Relief Expedition, 1899.

Xysticus bimaculatus, Emerton, 1894. Canadian Spiders in Trans. Connecticut Acad.

Xysticus deichmanni, Sorensen, 1898. Vid. Med. Nat. For., Copenhagen.

Mt. Lincoln, Colorado, U. S., 10,000 ft. F. C. Bowditch, 1877.

Laggan, Alberta, Canada, 6,700 to 8,500 feet. Bean, 1890.

Eastern Greenland, 70° north. Deichmann, 1892.

Ashford, Washington, U. S. Emerton, 1905.

Arctic Canada, Bernard Harbor. Canadian Arctic Expedition, 1913 to 1916.

This species was found by F. C. Bowditch in 1877 on the upper part of Mt. Lincoln, Colorado, and it remained for a long time unidentified. In 1890 the females were found by Bean near Laggan in the Rocky Mountains of Canada, and described in 1894 by Emerton in a paper on Canadian spiders in the Transactions of the Connecticut Academy. About the same time it was found by Deichmann in Greenland and described in 1898 by Sorensen as *Xysticus deichmanni* in the Proceedings of the Natural History Society of Copenhagen, Denmark. The Canadian Arctic Expedition brought both sexes from the northern coast of Canada in 1916 and by comparison with these the specimens from Mt. Lincoln, Colorado, were at last identified.

Pardosa (*Lycosa*) **hyperborea**, Thorell, 1873, in Synonyms of European Spiders.

Pardosa luteola, Emerton, 1894. Canadian Spiders, Trans. Connecticut Acad.

Eastern Greenland, Th. Holm. Copenhagen Museum.

Southern Labrador, C. W. Townsend.

Quebec, Canada, Emerton.

White Mountains, N. H., in bogs at 4000 feet. Emerton.

James Bay, Canada, latitude 52½° north. F. Johansen.

Manitoba, Canada, west of Hudson Bay. Emerton.

Athabasca Landing, Canada, in bog. Emerton.

In bogs across Canada, from Greenland and Labrador to the Rocky Mountains and south to the mountains of New England and New York.

Pardosa furcifera, Thorell, 1873.

This is described by Emerton in Canadian Spiders, Trans. Connecticut Acad., 1894, as one of the varieties of *P. glacialis*. It occurs in Greenland, Labrador, and Arctic Canada. It is usually larger than the typical *glacialis* and lighter in color, with much bright yellow on the legs, especially the under sides of femora and coxæ. In the paper referred to, Fig 2a, Plate IV, represents this species, and 2b its epigynum. The palpal organ differs little from *glacialis* and its relatives, but the male palpus is more slender and not much darker in color at the end than at the base, without the close black hairs which are characteristic of *glacialis* and *brunnea*.

Lycosa exasperans, Cambridge, Ann. Mag. Nat. Hist., London, 1877, from English Exploring Expedition of 1875-76.

This species has been identified by Strand in Fauna Arctica, 1906, with *L. alpigera* = *L. insignita*, Thorell. It is, however, distinguished from that species by the dorsal markings. The middle stripe of the cephalothorax in *exasperans* narrows in front between the eyes, widens behind the eyes, and narrows again in its posterior half. In *insignita* it widens regularly toward the front, so as to enclose the whole eye area. The abdomen of *exasperans* has usually a series of dark marks in the middle and a row of black and white spots at the sides. *L. insignita* has a large white middle mark surrounded by a black border and the spots on the sides are indistinct.

L. exasperans was found by the Crocker Land Expedition, 1917, at Saunders Island on the west coast of Greenland.

L. exasperans resembles closely *L. pictilis*, Emerton, which has similar markings, but is larger, more largely marked with orange hairs, and has a more angular epigynum. *L. pictilis* is found on the Mt. Washington range above trees up to the highest summits, on the coast of Labrador, and on the arctic coast of Canada. The Labrador specimens unfortunately are all immature.

L. mutabilis and *L. poecila*, described by Kulczynski, from Siberia, appear to resemble closely *exasperans* and *pictilis*, and it seems probable that comparison of a larger number of specimens would show that all these are one species extending along the arctic coast from Siberia to Greenland and south through Labrador to the White Mountains.

Lycosa alpigena, Doleshall.

Lycosa insignita, Thorell, 1872.

Lycosa albohastata. Emerton, 1890.

Lycosa insignita, Thorell, supposed to be identical with *L. alpigena* of the Alps, is also the same as the American *L. albohastata*, Emerton. This species does not range as far north nor live at as high elevations as *L. exasperans* and *L. pictilis*, but it extends across America to the Rocky Mountains, being found several times at elevations of 5,000 to 6,000 feet at Banff. It occurs at low elevations on both sides of Hudson Bay, in Labrador, on the coast of Maine, and in the White Mountains just above the trees.

Drassus troglodytes, Koch, 1839.

Drassus troglodytes, L. Koch, 1866, Drassidæ.

Drassus robustus, Emerton, 1890, Trans. Connecticut Acad.

Southwest Greenland, Copenhagen Museum.

Iceland and Europe south to the Alps.

Massachusetts, New Hampshire, Mt. Mansfield, Vt.

Sandusky, Ohio, Chicago, Illinois.

Laggan, Alberta, Canada.

Vancouver Island, B. C., Canada.

PROCEEDINGS OF THE CAMBRIDGE ENTOMOLOGICAL CLUB.

At the meeting, May 10, the committee on public lectures reported that four lectures had been given on Saturday afternoons in March and April in one of the small halls in Tremont Temple, on "Butterflies," by W. L. W. Field, on "Dragonflies," by R. H. Howe, Jr., on "Ants," by W. M. Wheeler, and on "Gall Insects" by A. C. Kinsey. An admission fee of 50 cents was charged, and there was an attendance of from one hundred to one hundred and fifty persons, so that enough was received to pay expenses of the course within ten dollars.

Mr. Reynolds reported the recent meeting of the New England Federation of Natural History Societies, in which three members of the Club took part.

Prof. C. T. Brues described a new minute Proctotrypid (Doli-